



MARION COUNTY
PUBLIC
HEALTH
DEPARTMENT

Prevent. Promote. Protect.

**TAILORED ENVIRONMENTAL
ASTHMA HOME VISITS &
COMMUNITY HEALTH WORKER**


MCPHD Asthma Referral Program

Presented by Robin Costley, CRT, AE-C



Asthma Alliance of Indianapolis

a coalition serving the needs of the Indianapolis community

- Formed in 1997 & consists of health care professionals with varied backgrounds including pediatric medicine, nursing, respiratory therapy, social work and environmental health.
 - Multi disciplinary approach to asthma management
 - Mission:
To arm individuals with the knowledge and skills to improve their health & quality of life.
 - Goals:
 - Raise awareness of asthma management best practices
 - Advocate to Improve policies & procedures to ensure healthy environments
 - Reduce asthma related school absenteeism
 - Reduce rate of hospitalizations
 - Increase ACT test scores with interventions
 - Increase **education** and more education at all points of care
- 

NATIONAL ASTHMA STATISTICS

- **Adult and Pediatric Asthma.** This is the 11th year that the Behavioral Risk Factor Surveillance Survey (BRFSS) questionnaire asks respondents “Have you ever been diagnosed with asthma by a health professional?” and “Do you still have asthma?”
- *Data results from the latter question are used to obtain county estimates.* In 2010, the Behavioral Risk Factor Surveillance System (BRFSS) survey indicated that approximately 9.9% of adults and 9.5% of children residing in Indiana



INDIANA STATISTICS 2010

- 9.5% Indiana Children aged 0-10 and 11.8% of 11-17 year olds currently have asthma
- Applying state rates to Marion County children ages 5-17 indicate that more than 15,000 local children currently have asthma
- 22.2% of Marion County children under the age of 5 (or nearly 29,000) are exposed to someone who smokes in their home
- Example: eliminating or reducing tobacco smoke exposure could prevent a considerable fraction of asthma in both children and adults.



DEVELOPMENT OF NEW ASTHMA CASES

- Family history of asthma or allergy increases asthma risk in childhood by 90%.
- Early and severe respiratory infections triple the risk of asthma onset.
- Boys are at greater risk of asthma than girls
- Maternal pre-natal smoking, and a child's exposure to environmental tobacco smoke are an independent risk factor for asthma incidence in children.
- Marion County Head Start children had a 12.8% asthma prevalence in 2011.



REFERRALS RECEIVED

- HCP offices
- Head Start
- Schools
- Hospitals
- Pulmonary Care Centers
- Neighborhood Clinics
- Those with moderate to severe cases of asthma have the greatest potential to benefit from home visits.
- They may not be knowledgeable about environmental triggers & unaware that they have regular contact with triggers in their home as well as other complicating issues



EFFECTIVE CARE FOR PEOPLE WITH ASTHMA

- **Tailored Environmental Interventions**
 - In-home assessments
 - School and workplace assessments
 - Environmental trigger education, control and remediation
 - Indoor Air Specialist, Housing, LSHH



Pollen



Mold



Dust mites



Pet dander

ADAM.



WHAT HAPPENS DURING AN ASTHMA HOME VISIT?

Guidelines-Based Care

- Clinical assessment of triggers
- Individually tailored counseling & education
- Environmental management and support
- Trigger control at home, school and work
- Identify problems (present and potential)
- Provide verbal and written education, ***including Asthma Action Plans.*** Referrals and products are given when able to help client correct or reduce housing hazards related to tobacco control, indoor air quality, cleaning, clutter, pests, mold/ moisture, structural issues and other asthma management issues.
- Demonstration of how to effectively use incentive items (door mats, dust mite protection pillow covers, detergent, bucket, micro-fiber rags, scrub brush, storage container for medications, vacuums and roach baits)
- Multi-lingual visits made with interpreter in English, Spanish and Burmese/ Chin.



Home Assessment

1) General Cleanliness

- ☐ General Clutter ☐ Newspapers/ magazines stacked
☐ Dirty Floors

2) Mold/ Moisture

- ☐ Mold growth ☐ Water stains ☐ Musty odors
☐ Condensation ☐ Ceiling tile stains ☐ Leaks at sinks
☐ Toilet leak ☐ Sewage backup

3) Dust Collectors

- ☐ Stuffed animals ☐ Rugs ☐ Carpets
☐ Upholstered furniture ☐ Pillows ☐ Curtains/ blinds
☐ Furniture ☐ Lamp shades

4) Pest Issues

- ☐ Observed pests, if so, type _____
☐ Food (crumbs, uncovered items) ☐ dirty dishes

5) Pets

- ☐ Dogs ☐ Cats ☐ Aquarium ☐ Other _____

6) Ventilation Issues

- ☐ Visible mold on unit
☐ Condition of vents _____
☐ Furnace filters are changed every : _____ by _____

7) Chemicals

- ☐ Air freshener spray ☐ Scented candles ☐ Oil diffusers
☐ Potpourri ☐ Plug ins ☐ Perfume/ cologne
☐ Strong cleaner smell (pine/ lemon)
☐ Other odors _____

8) Any concerns in general

9) Referral to ☐ Housing ☐ Indoor Air ☐ LSHH ☐ Other _____

HOME ASSESSMENT CHECKLIST

Structural issues and code enforcement are referred to Indoor Air, Housing or Lead Safe & Healthy Homes for further assessment and inspection for code violations.

In addition, these programs make referrals to the Asthma Program for families that need education on asthma control, medications, early warning signs, trigger identification & compliance.



WHAT HAPPENS DURING AN ASTHMA HOME VISIT?

Tools and forms

- 2013 Asthma Referral Form/ INTAKE
- 2013 Asthma Referral Response and follow up
- Home visit report- will include the topics covered, the home visit findings and the recommendations or plan of action.
- Report will include the condition of the home, ACT test score, known triggers, potential triggers, known symptoms and early detection, and use of asthma action plan, medications, devices and number of ER and hospitalizations in past year,
- Additional education such as school intervention, sports, co-parenting and other applicable resources and recommendations.
- Asthma Control Test (ACT) will be used to track asthma control. This quick test provides a numerical score to assess asthma control. It is recognized by the National Institutes of Health (NIH) in its 2007 asthma guidelines and is clinically validated against spirometry and specialist assessment.

Documents

- Cleaning Checklist
- Agreement
- Safe Home Cleaners
- Report including written summary of home visit



Childhood Asthma Control Test for children 4 to 11 years old.

Know the score.

This test will provide a score that may help your doctor determine if your child's asthma treatment plan is working or if it might be time for a change.

How to take the Childhood Asthma Control Test

Step 1 Let your child respond to the first four questions (1 to 4). If your child needs help reading or understanding the question, you may help, but let your child select the response. Complete the remaining three questions (5 to 7) on your own and without letting your child's response influence your answers. There are no right or wrong answers.

Step 2 Write the number of each answer in the score box provided.

Step 3 Add up each score box for the total.

Step 4 Take the test to the doctor to talk about your child's total score.

**19
or less**

If your child's score is 19 or less, it may be a sign that your child's asthma is not controlled as well as it could be. No matter what the score, bring this test to your doctor to talk about your child's results.

Have your child complete these questions.

1. How is your asthma today?



0

Very bad



1

Bad



2

Good



3

Very good

SCORE

2. How much of a problem is your asthma when you run, exercise or play sports?



0

It's a big problem, I can't do what I want to do.



1

It's a problem and I don't like it.



2

It's a little problem but it's okay.



3

It's not a problem.

3. Do you cough because of your asthma?



0

Yes, all of the time.



1

Yes, most of the time.



2

Yes, some of the time.



3

No, none of the time.

4. Do you wake up during the night because of your asthma?



0

Yes, all of the time.



1

Yes, most of the time.



2

Yes, some of the time.



3

No, none of the time.

Please complete the following questions on your own.

5. During the last 4 weeks, on average, how many days per month did your child have any daytime asthma symptoms?



5

Not at all



4

1-3 days/mo



3

4-10 days/mo



2

11-18 days/mo



1

19-24 days/mo



0

Everyday

6. During the last 4 weeks, on average, how many days per month did your child wheeze during the day because of asthma?



5

Not at all



4

1-3 days/mo



3

4-10 days/mo



2

11-18 days/mo



1

19-24 days/mo



0

Everyday

7. During the last 4 weeks, on average, how many days per month did your child wake up during the night because of asthma?



5

Not at all



4

1-3 days/mo



3

4-10 days/mo



2

11-18 days/mo



1

19-24 days/mo



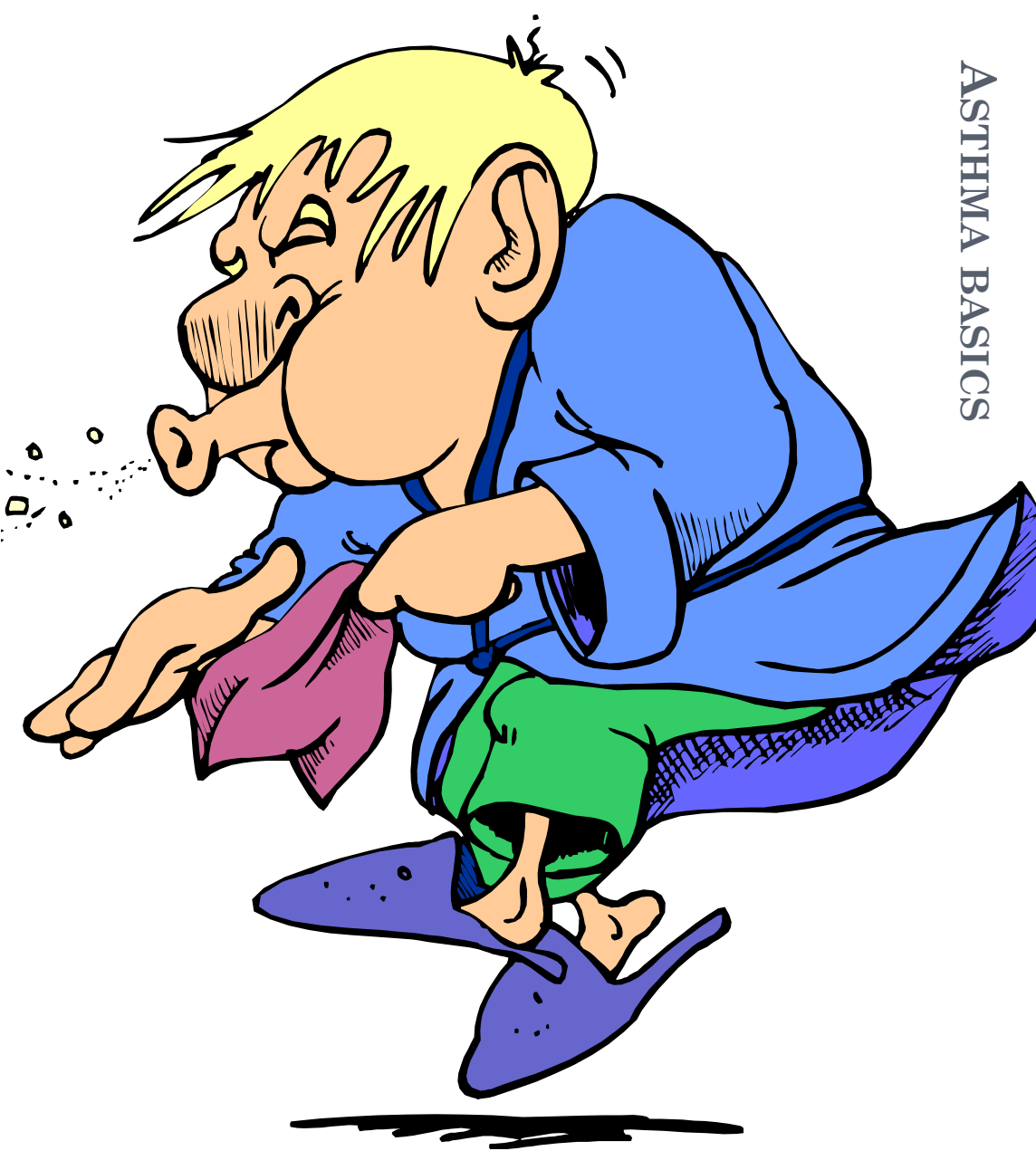
0

Everyday

TOTAL

Please turn this page over to see what your child's total score means.

ASTHMA BASICS



1. Bronchoconstriction
2. Airway inflammation
3. Increased mucus production

Wheezing

Increased cough

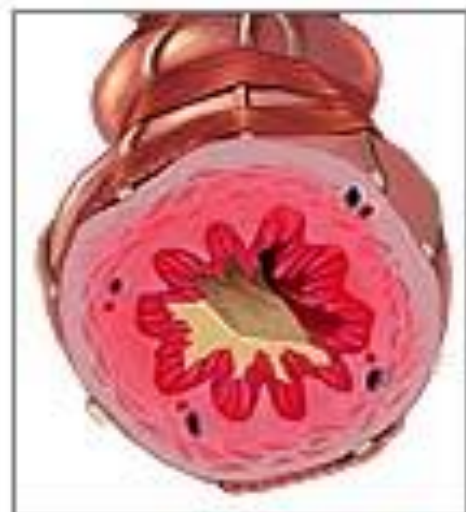
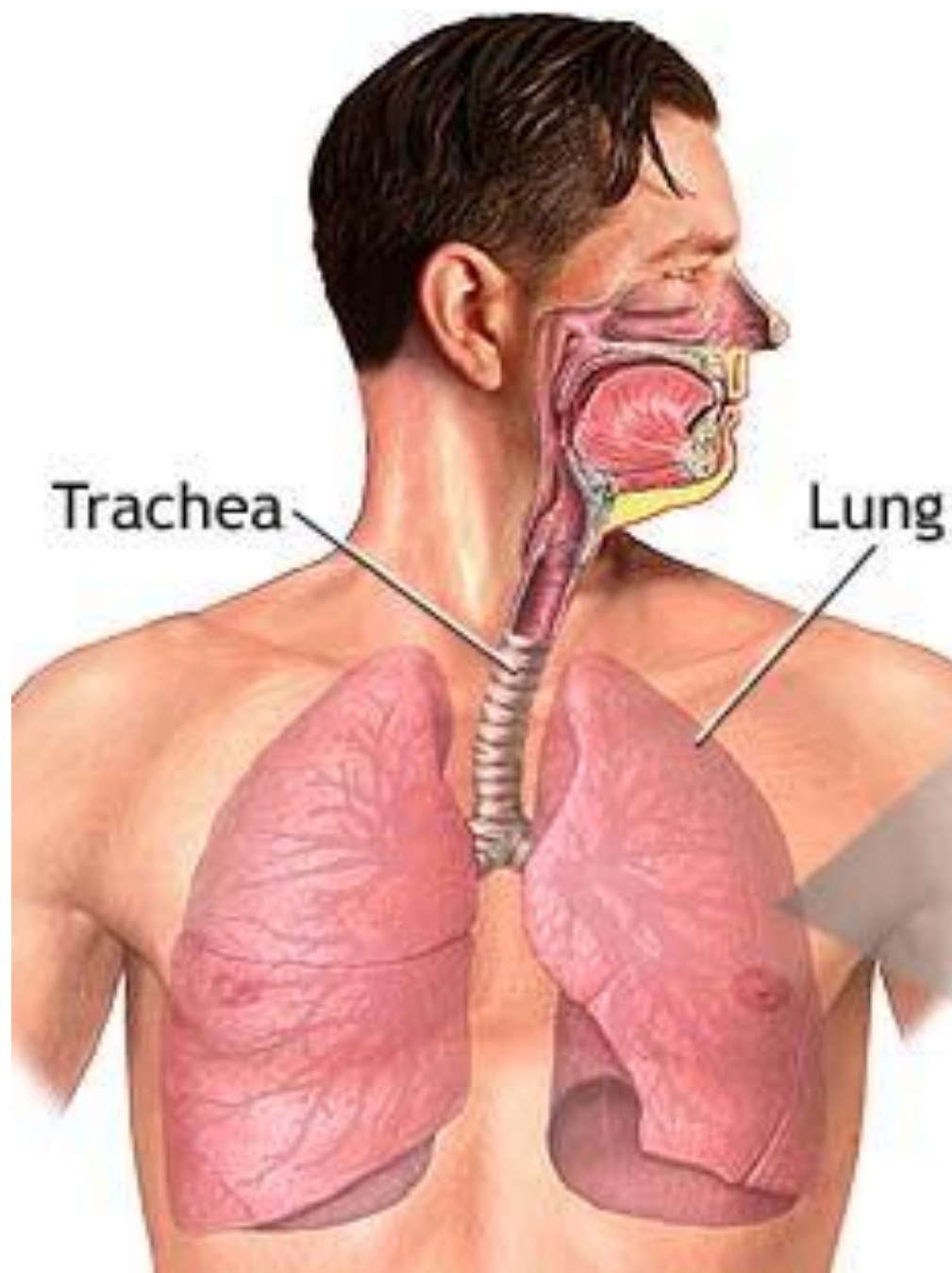
Chest tightness

Shortness of breath

Can be controlled

Stop it before it starts...





Asthmatic bronchiole



Normal bronchiole

AVOIDING THE ENEMIES

Prevent attacks by staying away from things that make asthma worse

Find out what makes **YOUR** asthma worse. Everyone with asthma has a different set of things that trigger their asthma



COMMON TRIGGERS

- Tobacco smoke/ any smoke from wood burning fires, candles
- Dust mites
- Animal dander
- Cockroach
- Indoor Mold
- Strong odors or sprays



ROLE OF ENVIRONMENTAL FACTORS

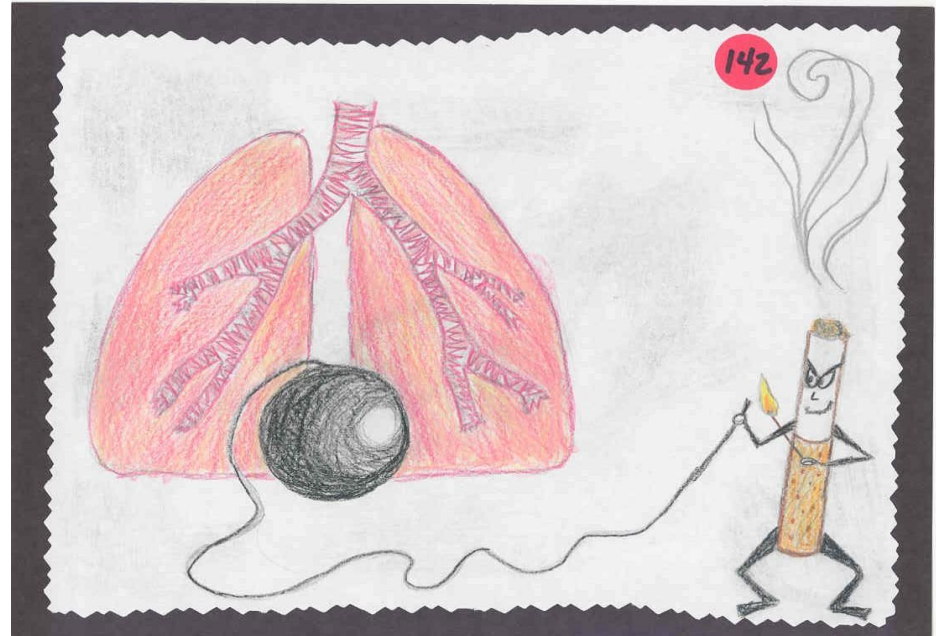


- Watching for things that seem to trigger asthma then controlling exposure to these triggers.
- This may mean avoiding certain situations or things.
- *It could mean being symptom free with less medications.*



PRIMARY AND PASSIVE TOBACCO SMOKE

- Allergen or Irritant?
- Long term exposure can cause asthma, particularly in children and older adults. Irreparable damage, lung remodeling.
- Over 1 MILLION adults in Indiana still smoke!
- Indiana ranks high among all states in adult smoking prevalence and is higher than the U.S. rate of 17.2% compared to 27.4% in 2001.
- • The adult smoking rate among Indiana men (23.3%) remains higher than that of Indiana women (19.3%).



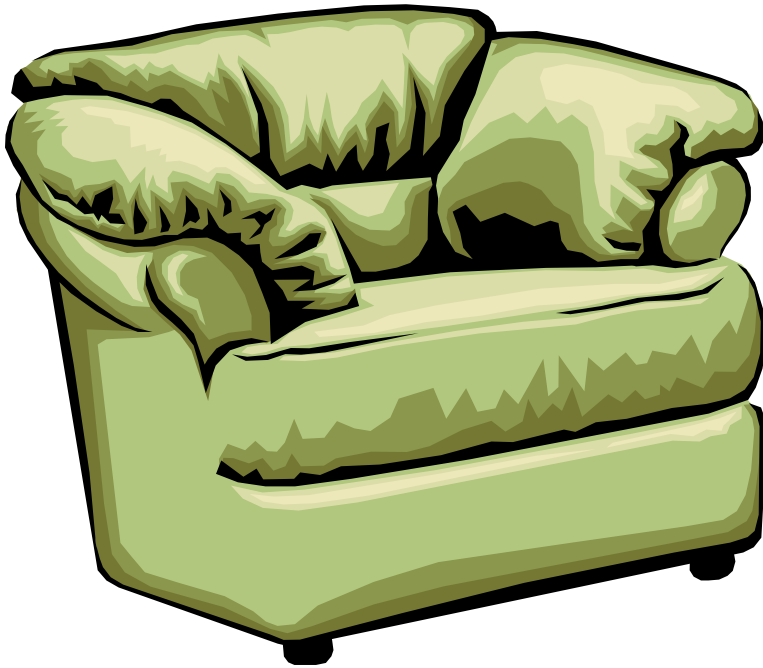
Children are affected more by SHS because their bodies are still developing and SHS can hinder the growth and function of their lungs.

- In 2009, nearly 29,000 children were exposed to someone who smoked in their home.
- EPA Take it Outside Campaign
- 1-800- QUIT NOW



IN A PERFECT WORLD...

DUST MITES



- Wash sheets and blankets in hot water once/ week
- **Remove stuffed toys, carpets, and other clothe covered items.**
- Keep indoor humidity < 50%
- Reality check... some families don't have furniture or beds.
- Vacuum?



ANIMAL DANDER

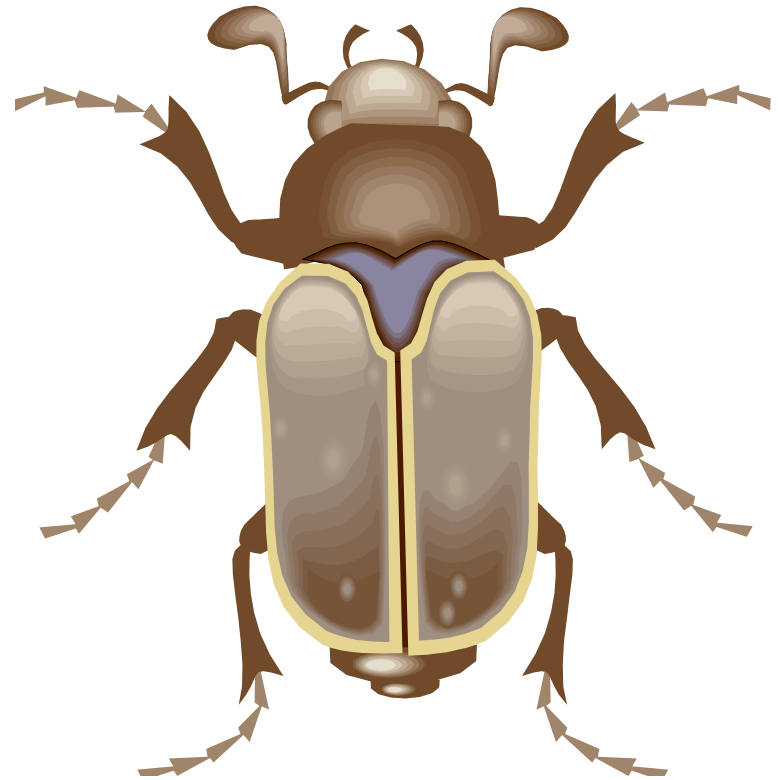


- Flakes of skin or dried saliva from animals fur or feathers
- Keep pets out of home OR at least...Keep out of bedroom
- Filter air vents in bedroom
- Best to do **allergy testing** to determine if the pets are contributing to the asthma symptoms



COCKROACHES

- Dried droppings and remains of cockroaches
- Keep all food out of bedroom
- Keep food and garbage in closed containers.
- Can live without food for a month, can only live without water for 1 week.
Always looking for water source. (water bugs)



MOLDS



- Find source of water leak . Repair and dry ASAP
- Clean with scrub brush,detergent & water...keep dry
- Outdoor molds- keep windows closed. Stay inside especially during midday & afternoon.
- Ask doctor about **increasing long term control meds** during allergy season



MISCILLANEOUS TIPS

- ⑩ Open windows especially when indoor pollutant sources are increased. (this must be balanced against concern of mold or other plant allergens and outdoor air pollution.)
- ⑩ **Parents should change clothes** prior to returning from work if they work around strong smelling chemicals, paint or other toxic substances.
- ⑩ Avoid strong odors and maximize use of products and materials that do not emit irritants such as smoke, strong perfumes, talcum powder, hair sprays, cleaning products, paint fumes, sawdust, chalk dust, air fresheners and insect sprays.
- ⑩ Replace **air filters on furnace** regularly *



STRONG SMELLS / CLEANING SUPPLIES

SAFE HOME CLEANERS

All Purpose Cleaner

1 gallon hot water
¼ cup plain ammonia
¼ cup vinegar (white or cider)
1 Tablespoon baking soda

Drain Cleaner

1 cup baking soda
1 cup salt
¼ teaspoon cream of tartar
Once a week pour ¼ cup of mixture into the drain, followed by a pot of boiling water.

Glass Cleaner

Mix equal amounts of white vinegar or rubbing alcohol and water

Copper Cleaner

Make a paste of lemon juice, salt and flour and rub on surface with a soft cloth. Rinse with water.

Stainless Steel Cleaner

Use a soft cloth dipped in vinegar to remove spots. Rub with a sprinkle of baking soda or a drop of mineral oil on the surface to shine it.

Carpet Spot Cleaner

Use Club Soda as a spot remover. For stubborn spots add a drop or 2 of liquid dish washing detergent and rinse well. Dry the area with a hair dryer to prevent watermarks.

Odor Removal

Sprinkle area with baking soda or set a dish of white vinegar in the area.

Mildew Removal

Mix lemon juice or white vinegar with salt to remove mildew on bathroom tile. Scrub grout with an old toothbrush or small stiff-bristled brush.

Room or Refrigerator Deodorizer

Charcoal set out in packets; close off room for period of time.

Furniture Polish

Beeswax, lemon oil, raw linseed oil, mineral oil, olive oil and paste wax. Make sure that vegetable oils haven't turned rancid. Olive oil can be used to clean pewter.

Soap

Avoid deodorant soaps; choose unscented or mild soaps

Mold, Mineral Deposits, Crayon Marks & Wallpaper Cleaner

Mix equal parts of white or apple cider vinegar with water.

Toilet Bowl Cleaner

Use ½ cup vinegar; allow to stand for 30 minutes then scrub and flush

NOTE: NEVER mix solutions containing ammonia with another containing chlorine bleach, as this will produce a highly toxic gas.



#1 YOUNG SINGLE MOM WITH 5 SMALL CHILDREN



- All have asthma including Mom
- Mom has severe depression
- 2 children are special needs
9 year old and 4 year old
- Youngest 2 years old-1st visit very uncontrolled
Infants have their own set of challenges
- 1st seen in 2011
- Recent follow up ACT scores improved
- Relocated with help from
Social Work
- CHW continued f/u and support



#2 SPECIAL NEEDS CLIENT

Legally responsible for herself. Lives with family with multiple triggers in the home.

- First seen in Fall 2011 Asthma uncontrolled
- Cats, Dogs, smokers in home, stressors
- ACT test score in 9/2011= 8
- Score increased to 16 in 11/2011
- Current score 21!!!!
- Calls daily AE-C, CHW to report symptoms and get direction. Reminded to take meds, HCP increased controller dosage as recommended



ALSO OUR MOST DISTINGUISHED VOLUNTEER
WHO GOES ABOVE AND BEYOND...



#3

TWO YOUNG BOYS WITH SEVERE ASTHMA

- Parents barriers to caring for their children
- Crisis at first visit
- Housing referral ASAP
- Dad most responsible at caring for children
- Mom incarcerations, drug use, ? Selling asthma meds for drugs?
- Children in unsafe environment
- 2012 – children admitted to hospital 4 times with 2 PICU admits
- High risk
- **School intervention**
- CPS involvement



#4 SINGLE MOTHER WITH CYSTIC FIBROSIS & SPEECH IMPEDIMENT

2 SONS- YOUNGEST WITH SEVERE ASTHMA & AUTISM

Initial visit in 2006

Mom very involved in his care and stays in tune with current asthma orders for Son

- So difficult for Mom to communicate with HCP / treated with disrespect. **Multiple HCP's, MULTIPLE MEDS**
- Asthma so severe that she has to call 911 , he reacts very quickly to triggers.
- DME Co. donated portable nebulizer
- Referral to About Special Kids/ Computer
- ACT test scores in 2006 only 8/ 2013= 15!
- Multiple ER and hospitalizations until interven
- Hasn't been in ER or hospital for 2 years now
- **A Medical Home ☺**



5 SINGLE MOM WITH 5 SMALL CHILDREN. 8 MONTH OLD TWINS JUST DIAGNOSED.

- Crisis situation/ roach infestation
- No furniture, beds
- Mom stayed up at night to watch children on mat in front room
- **Not ready for asthma education**
- Relocation
- Social Worker referral for resources
- All doing well. Mom is getting rest too!
- Happy ending 😊



#6 SPANISH CLIENT WITH INTERPRETER

- Client speaks only Spanish
- Visit revealed a miscommunication believed to be a result of language barrier
- Ran out of meds
- Did not follow through with making HCP appointment. Did not understand the importance and chronic nature of asthma
- Education provided with interpreter/ medications, early warning signs, symptoms, potential triggers home & work
- Provided an **interpreter to help him navigate the system** and stay on track with his medications



THE COST OF ASTHMA HOSPITALIZATIONS

Health Care Costs

59% were paid for by public programs
such as Medicaid/ Medicare

# MC H O S P I T A L Visits	Pts. % Increase	Total Days	Avg. Days Per Patient	Total Charges (\$M)	Percent Increase	Avg Charge/ Patient
2006		6081	3.65	\$17.55		\$10,539.95
2009	+ 35%	6583	2.92	\$30.50	73%	\$13,597.77

HOME VISIT COSTS

- On average, each family received 1.2 home visits
1 home visit & 1 F/U phone call

- **The average cost per home visit is \$278**

Personnel/salary/ fringe=\$140

Mileage/Avg 15 miles= \$8.00

Supplies=\$70.00

Indirect= \$60.00

- Three hours per home visit is comprised of 22 minutes for processing referral and setting up appointment time, 1 hour round trip travel, 45 minutes in the home & 40 minutes of data entry and referral completion.



LESSONS LEARNED

- Attempted various ways to follow up with clients for ACT scores
 - mailing
 - calls

Determined that **families DO want a 2nd home visit.**

- 2nd CHW visit helps improve behavioral change, mitigation actions.
- In retrospect the second visit makes sense and scientific evidence & EPR -3 Guidelines support more than one visit.
- Some clients really pay attention to education and make attempts to remediate triggers
- Better communication with HCP with direction of CHW,AE-C
- Some clients aren't ready to learn
- ACT test score follow ups increased after 1st home visit intervention




OBTAINING FUNDING FOR ENVIRONMENTAL CONTROL SUPPLIES

- Charitable contributions from pharmaceutical companies, local business, sororities and other organizational members of the coalition.
 - Environmental Protection Agency
 - Home visit programs
 - Open Airways
 - School Health Educator
- CDC/ ISDH
MCPHD/ Health & Hospital
Corporation of
Marion County



BENEFITS OF THE ASTHMA HOME VISIT

- Case management/ benefit of being part of MCPHD
 - Improve targeting of environmental interventions to at risk populations
 - Increase access to environmental services for people with poorly controlled asthma
 - **Integrate home & environmental management into usual medical care for asthma**
 - Home visit program relies on strategic partnerships with clinical providers & organizations to assure appropriate clinical care & follow up for housing and medical needs.
 - This is critical to receiving comprehensive care.
 - ACT scores improved by 86% with follow up
 - Medicaid reimbursement ahead?
- 

QUESTIONS?

- Enjoy the challenge that each home visit brings
- RT students, Interns and school health personnel shadow home visits for insight into what is really going on in the home and how to put it into practice.
- Form positive relationships with client and family for future opportunities to educate family and be a resource for the family/ the bond
- They do look to AE-C for guidance in future questions and concerns.

VISIT OUR WEBSITE
@

www.asthmanindy.org



Asthma Alliance of Indianapolis

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Please don't hesitate to call us with any questions or concerns.

THANK YOU FOR YOUR TIME.

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